13000X778 series

High performance pushbutton switches • threaded bushing Ø 11.9 mm • alternate action

DISTINCTIVE FEATURES

Alternate action

Fully sealed at front and back

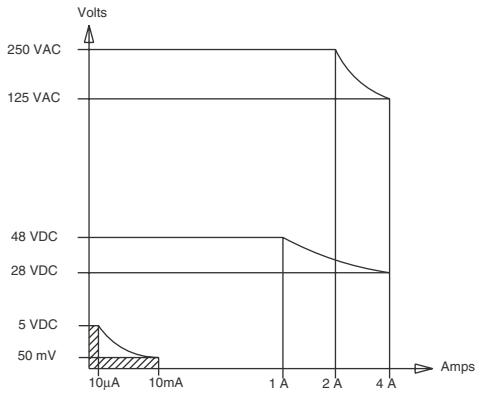
Double shell case for high mechanical strength and electrical insulation

Highly reliable contacts

Compact size

ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load : 4 A 28 VDC
- Minimum load : 10 mA 50 mV, 10 µA 5 VDC
  When used above 300 mA 28 VDC, the gold plating is removed on contact areas and is considered only as a protection against oxidation during storage.
- Initial contact resistance : 10 mΩ max.
- Insulation resistance : 1,000 MΩ min. at 500 VDC
- Dielectric strength :
  1,000 Vrms 50 Hz min. between terminals
  2,000 Vrms 50 Hz min. between poles
  2,000 Vrms 50 Hz min. between terminals and frame
- Contact bounce : 2 ms max.
- Electrical life :
  - At 4 A 28 VDC : 10,000 cycles
  - At low level (50 mV 10 mA) : 150,000 cycles



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ENVIRONMENTAL SPECIFICATIONS

- Shock test : 50 g - 11 ms (IEC 68-2-27)
- Vibrations : 10-500 Hz - 10 g (IEC68-2-6)
- Operating temperature : -40 °C to +85 °C (-40 °F to +185 °F)
- Humidity test : 56 days, 93 % R.H., 40 °C (IEC 68-2-3)
- Salt spray test : 96 hours (IEC 68-2-11)

GENERAL SPECIFICATIONS

- Total travel : 2.5 mm (.098)
- Torque : 1.50 Nm (1.10 Ft.lb) max. applied to nut
- Panel thickness : 8 mm (.315) max.

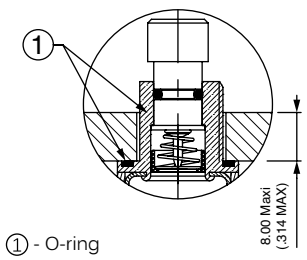
MATERIALS

- Case : diallylphthalate (DAP) with PBT external shell (epoxy sealed)
- Actuator : brass, black chrome plated
- Bushing : brass, black chrome plated
- Contacts : silver inlay - gold plated over nickel barrier

APEM products may be recycled at end-of-life for the re-claiming of valuable metal components.

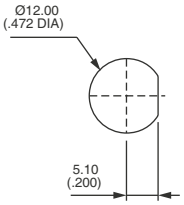
SEALING

- Front panel sealing by two O-rings
- Panel seal withstands 1 bar pressure and remains sealed even when the switch is operated.
- Epoxy sealed terminals
- Splash-proof case

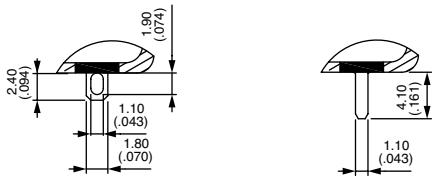


① - O-ring

PANEL CUT-OUT

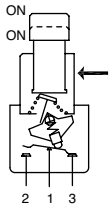


TERMINALS



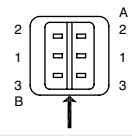
ELECTRICAL FUNCTION

→ FLAT



POSITIONS AND CONNECTIONS

Function	BUTTON POSITION AND CONNECTIONS I	II	TERMINAL IDENTIFICATION
	ON	ON	→ FLAT
13246	A 1-2	A 1-3	
13446	B 1-2	B 1-3	



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BUILD YOUR PART NUMBER

BASIC PART NUMBER

13 _ _ _ _ _

SERIES	TERMINALS AND BUSHING	NUMBER OF POLES	ELECTRICAL FUNCTION	PLUNGER	X778
	2 Straight PC terminals, threaded bushing Ø 11.9 (15/32)	4 Double pole	6 ON - ON	-3 8.15 mm (.321) long	High performance fully sealed black switches.
	4 Solder lug terminals, threaded bushing Ø 11.9 (15/32)				

ABOUT THIS SERIES

Complete part numbers are shown on next page.

Sealing boots can be used to further protect the switches against dust and water. See “Sealing boots“ section of website.

Mounting accessories : standard hardware supplied with all models : 1 hex nut 14 (.551) across flats, part number U41. This nut is presented after basic part numbers.

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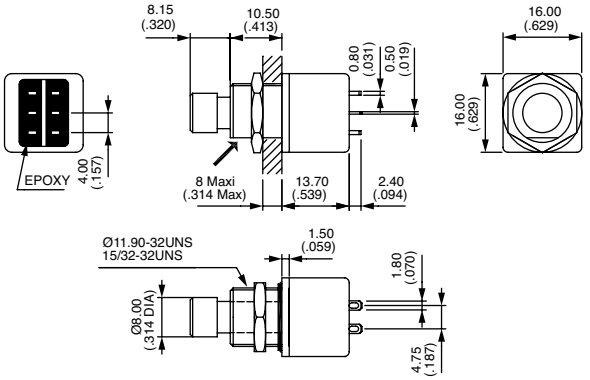
SOLDER LUG TERMINALS - DOUBLE POLE

13446-3X778	ON	ON

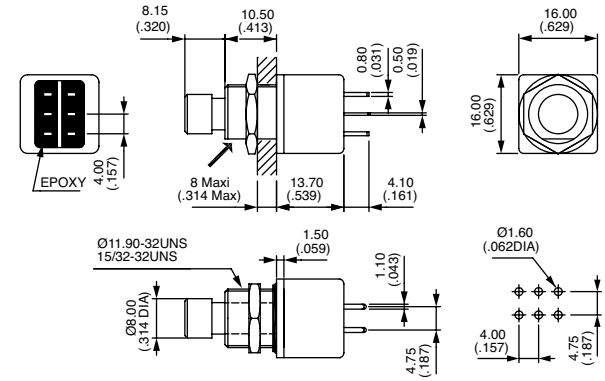
→ FLAT



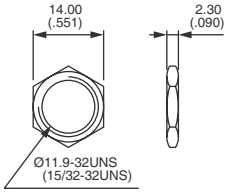
STRAIGHT PC TERMINALS - DOUBLE POLE

13246-3X778	ON	ON

→ FLAT



STANDARD HARDWARE - HEX NUT



U41 (black)